City of Boston
Climate Action Plan
Summary

climate: change

MAYOR THOMAS M. MENINO

"There is a range of everyday actions we all can take to mitigate the effects of climate change and protect our environment." – Mayor Thomas M. Menino

A letter from Mayor Menino

Dear Friends:

Boston has long been a pioneering city, confronting the biggest challenges by harnessing our competitive assets and dynamic population to produce significant advances not only for our city, but for the entire world. Climate change is one of these challenges. It demands an immediate and sustained response; inaction is not a choice. Although the science behind climate change is complex, the reasons for action are clear: protecting Boston—the city of today and of the future—from climate risks, and taking advantage of the opportunities that climate change presents. Implementing an ambitious sustainability agenda will streamline city government, improve public health, spur economic development, and most importantly, leave a better, more secure city to the next generation of Bostonians.

In that innovative spirit, I present Climate: *Change*, the City of Boston's plan to reduce its contributions to the causes of climate change and to adapt to the changes already underway. This summary document—and the fuller report behind it—describe the sources of Boston's greenhouse gas emissions and the actions the City is taking to reduce them.

On April 13, 2007, I signed an Executive Order to set clear and challenging goals for the City's efforts. These include reducing our annual greenhouse gas emissions seven percent below 1990 levels by 2012 and 80 percent below 1990 levels by 2050. The Executive Order also establishes policies for efficient buildings, renewable energy, and vehicle procurement, and requires City Hall to report on its progress every year. Finally, as announced in the order, I am creating a Community Climate Action Task Force to mobilize the entire city—residents, businesses, and institutions—around this important endeavor.

I am proud to report that the City of Boston has already taken many significant steps. For example, 12 percent of the electricity we purchase for municipal operations comes from renewable resources, ranking Boston in the top 10 of municipalities in the United States. We require that all new city-owned building projects meet the Silver level of the U.S. Green Building Council's LEED standards, and we recently amended our zoning code to hold large private developments to a similar standard. Boston will plant 100,000 trees in the next 13 years to increase our tree canopy, which cools the city in summer, absorbs carbon dioxide, and cleans the air of other pollutants.

I know that City Hall is not alone in its concern about global climate change, and success in reaching our goals depends on the actions—from recycling to carpooling to installing solar panels—that each one of us can take to reduce our use of energy and protect our environment. I invite you to take the Climate Action Pledge on the last page of this brochure, and I look forward to working with all of you to enhance Boston's status as a global leader in addressing climate change.

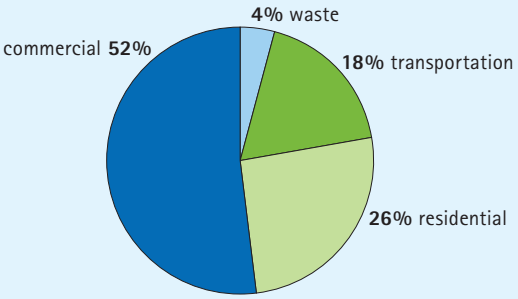
Sincerely,

Thomas M. Menino

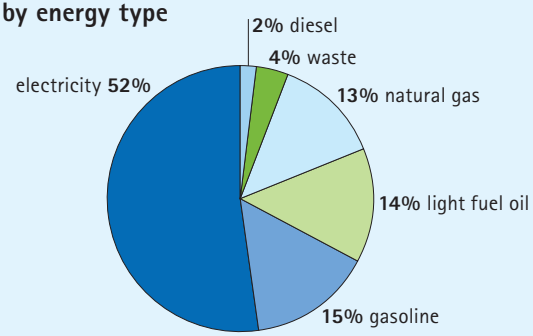
Mayor of Boston

Changing our thinking

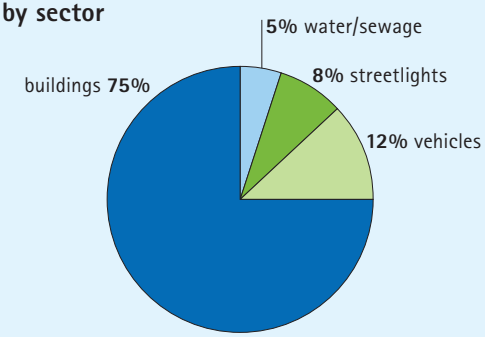
Community GHGs by sector



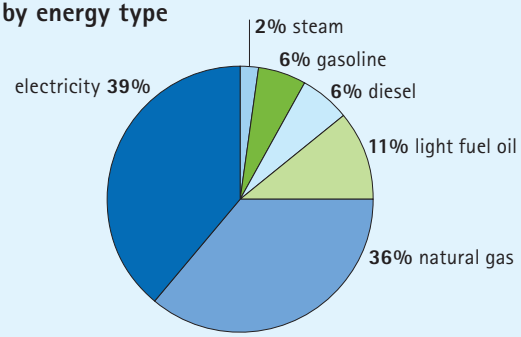
Community GHGs by energy type



Municipal GHGs by sector



Municipal GHGs by energy type



The greenhouse effect. Global warming. Climate change. These terms, once used only by scientists and environmentalists, now appear almost daily in news stories and speeches and everyday conversations. Today, few doubt that our climate is changing—around the world and here at home—and that the effects of climate change will be serious.

Some gases in the atmosphere, such as carbon dioxide, methane, nitrous oxide, and ozone, absorb energy radiating from the sunlight-warmed surface of the Earth. By preventing this energy from escaping into space, the "greenhouse effect" keeps the Earth warm and hospitable to the life teeming around us. However, human activity is rapidly raising the concentration of greenhouse gases in the atmosphere.

Earlier this year, the Intergovernmental Panel on Climate Change, comprising scientists from around the world, released its fourth assessment of the science and effects of climate change. It identified unequivocal evidence that our planet—land, sea, and air—is warming. The Panel concluded, "Most of the observed increase in globally averaged temperatures since the mid-20th century is *very likely* due to the observed increase in anthropogenic greenhouse gas concentrations."

The warming of the Earth is changing its climate. Some areas of the Earth will start getting more rain, and others less. Most places will be hotter, though some will be colder. The timing of the seasons, as evidenced, for example, by the first flowers in spring or the first winter ice on ponds, will shift. These and other changes will affect:

- Human health, through extreme weather, air pollution, drinking water shortages, and changes in disease patterns;
- Local economies, especially in coastal communities, where increased sea levels and flooding and more violent storms will disrupt homes, businesses, infrastructure, and ecosystems;
- Water resources, through changes in rainfall, floods, and droughts;
- Ecosystems, their biodiversity, and by extension, their vast range of benefits to human societies;
- Agriculture, through changes in precipitation, temperature, and disease and pest prevalence.

As greenhouse gases enter the atmosphere in greater amounts, the rate of climate change is predicted to accelerate. Because we all cause greenhouse gas emissions by heating, cooling, and lighting buildings, traveling to work, school, and vacation, changing the use of land, and disposing of waste, it might seem that the problem is impossible to solve. But it is time to change our thinking, to contribute to the solution, to take actions that reduce greenhouse gas emissions and mitigate climate change.

change: Boston

Mayor Menino's 2007 executive order demonstrates how City Hall is continuing to respond to the growing understanding of the causes of and solutions to climate change. It builds on the efforts that the City of Boston has made since joining the international Cities for Climate Protection campaign in 2000. What government does, however, is not enough: municipal operations account for only about five percent of the greenhouse gas emissions of Boston as a whole.

Fortunately, the Boston community is taking action as well. Many residents of Boston are weatherizing their homes, or walking more and driving less, and many local businesses and institutions are making substantial efforts to reduce energy use. In April 2007, Mayor Menino gave Boston's first Green Awards to twelve business and five residents who had gone above and beyond in their attempts to use green technologies and sustainable practices in their businesses and communities. To further focus the many efforts underway in Boston, the Mayor will establish a Community Climate Action Task Force to set goals and recommend actions for community-wide GHG reductions.

change: for the better

In all aspects of our lives, we have opportunities to reduce our use of energy and our emissions of greenhouse gases.

Maverick Landing

Boston Arts Academy

IBEW Local 103

Boston Common

Improving our buildings and structures

About three-fourths of Boston's greenhouse gas emissions come from heating, cooling, and providing electricity to buildings—homes, schools, stores, offices, hospitals. We are cutting energy use in Boston's buildings by:

- Requiring that all new municipal buildings, City-funded housing, and large private developments meet higher standards of energy use and conservation
- Renovating existing municipal buildings and improving operations
- Building affordable housing with Energy Star standards, more insulation, better windows, and renewable energy
- Creating the Boston Energy Alliance, an initiative to increase energy efficiency and renewable energy citywide

Balancing our transportation system

Transportation accounts for about 18 percent of Boston's greenhouse gas emissions. Although not the largest source of emissions, it is often the most visible. Because we make transportation decisions every day, it is also an area where we can change faster. In the City of Boston, we are:

- Increasing the number of hybrid and alternative fuel vehicles in the City fleet and increasing the use of biofuels
- Working to expand the CleanAir Cabs program, which provides incentives for hybrid and alternative-fuel vehicles in the City's taxi fleet
- Purchasing new school buses with better fuel mileage and lower emissions of air pollutants
- Providing Transportation and Air Quality grants to neighborhood groups working on local solutions
- Supporting transit-oriented development
- Making Boston more bike-friendly with comprehensive signage, lane markings, and more bike racks around the city

Optimizing our energy sources

However efficient we make our buildings and vehicles, we will still consume energy. We need to make sure that the energy that we use is produced as efficiently as possible and relies on fossil fuels as little as possible. We are:

- Increasing the amount of electricity from renewable sources that we buy for municipal operations
- Installing solar energy and combined heat-and-power units in schools and other municipal facilities
- Investigating opportunities for biomass energy generation and wind power
- Working with local businesses and utilities to increase the opportunities and the resources available for distributed generation

Managing our land

Although most of our climate action efforts are directed at reducing the use of fossil fuel as a source of energy, there are other sources of carbon dioxide that depend, for example, on whether we use our land for burying garbage or for literally greening the city. We are:

- Expanding recycling programs for residents and municipal operations to divert garbage from landfills and reuse valuable materials
- Planting more trees to cool the city and absorb carbon dioxide
- Protecting our wetlands and urban wilds
- Supporting community gardens and urban farms as local and healthy food producers

change: for our health, for our economy

Cuts in greenhouse gas emissions start at home. From simply preserving our "green canopy" and keeping our homes cool, to thoughtfully renovating our homes with energy efficiency in mind, seemingly small steps will contribute to our success.

Shown here: the South End (top), and Trinity Terrace (above).

Growing Boston greener

Boston enjoys the beauty and benefits of a half million trees that spread a canopy shading 30 percent of its area and remove carbon dioxide and other pollutants from the air. The City of Boston, working with the Urban Forest Coalition and the Commonwealth's Department of Conservation and Recreation, is expanding these benefits with Growing Boston Greener, a program that will plant 100,000 trees in Boston by the year 2020. This initiative includes a Neighborhood Roots program, which helps residents and business owners get involved, mobilizing Boston's citizenry around this ambitious goal and demonstrating that each individual can take action to expand Boston's green space.

Leading by example

Government should not demand high environmental standards from private developers without holding itself to a standard at least as high. Therefore, the City will obtain LEED Silver certification from the U.S. Green Building Council for new construction and major renovations; planning for the first new municipal buildings under this requirement is underway. In addition, the City will aggressively examine its existing buildings to capture opportunities to improve their efficiency and to determine the feasibility of installing solar, wind, bio-energy, combined heat and power, and green roof installations.

Driving sustainability forward

City government uses vehicles to collect trash, remove snow, clean streets, and bring children to and from school, but the vehicles' engines emit gases that contribute to climate change and air pollution. That is why the City will now purchase hybrid or alternative-fuel vehicles wherever possible. The new policy also requires that the City's current fleet of 450 diesel vehicles use a biodiesel blend to reduce greenhouse gas emissions. Reaching beyond its own fleet, the City of Boston is providing financial incentives to encourage Boston taxicab owners to switch to hybrid or alternative-fuel vehicles and has created a distinctive CleanAir Cabs logo to mark these cars on the streets.

Learning from the Boston Public Schools

The Energy Office of the Boston Public Schools is setting an outstanding example for the entire city. This small office tracks the details of energy use in every school facility and conducts regular audits to identify opportunities for energy savings. 26 schools now include cogeneration units, efficiently producing heat and electricity together, and 3 schools have solar panels on their roofs, with more such installations being considered. Overall, the Boston Public Schools have reduced total energy purchases by 10 percent in the past twenty years, even as the total size of their facilities and, in particular, the number of computers and other electrical equipment have increased. These efforts ensure that Boston's students not only learn inside our school buildings, but also *from* them.

Building a greener future

Linking sustainability and affordable housing, the Boston Department of Neighborhood Development is using a $2,000,000 grant from the Massachusetts Technology Collaborative to incorporate renewable energy, energy efficiency, green design, and healthy homes construction practices into affordable housing projects, with a particular focus of providing solar power for 200 residential units. The Boston Housing Authority is incorporating LEED standards and Energy Star products into its projects. And to bring new opportunities to the entire community, the City of Boston, named a Solar America City by the U.S. Department of Energy, is establishing Solar Boston, a program to create the technical and financial infrastructure for widespread solar installations.

Energy savings can be found in unexpected places. From rooftops to pavement we can design our buildings to make the most of our environment and require less energy to be safe, comfortable, and practical.

Shown here: Boston City Hall green roof demonstration project (top), and WGBH Headquarters in Brighton (above)

If we are going to successfully confront climate change, sustainability and collaboration must be our watchwords. This issue is too big for us not to work smartly and work together.

change: our direction

The challenge facing Boston—and the world—is clear and urgent. Lowering greenhouse gas emissions and addressing global climate change requires everyone's collaboration.

Mayor Menino's Climate Action Pledge

I pledge to take these 10 greenhouse gas-reducing actions:

1. Replace incandescent light bulbs with compact fluorescent bulbs.
2. Use warm or cold water instead of hot for laundry.
3. Plan car-free days. Walk, ride a bike, or take public transportation.
4. Plant a tree.
5. Turn the thermostat down in the winter and up in the summer, especially at night and while away from home.
6. Recycle as much as possible, including newspapers, glass and plastic containers, and aluminum and steel cans.
7. Unplug electronic equipment when not in use.
8. Re-use paper and plastic bags; or better yet, bring a re-usable bag to stores.
9. Buy locally grown food when available.
10. Spread the word! Tell family and friends about climate action.

Name

Date

If you want to get more involved go to www.cityofboston.gov/climate

Resources

Get the full Climate Action Plan and learn more about Boston's approach to sustainable development and environmental stewardship:
www.cityofboston.gov/climate

Mayor Menino's Executive Order on Climate Action
www.cityofboston.gov/environmentalandenergy/pdfs/Clim_Action_Exec_Or.pdf

Boston's Urban Forest Coalition
www.bostonforest.org

Boston Zoning Code, Article 37, Green Buildings
www.cityofboston.gov/bra/pdf/ZoningCode/Article37.pdf

Boston CleanAir Cabs
www.bphc.org/bphc/cleanaircabs.asp

CLIMB Project: Climate's Long-Term Impacts on Metro Boston
www.tufts.edu/tie/climb

Mayors Climate Projection Center
www.usmayors.org/climateprotection

ICLEI—Cities for Climate Protection
www.iclei.org

The Green Roundtable
www.greenroundtable.org

Massachusetts Technology Collaborative
www.mtpc.org

Massachusetts Department of Environmental Protection
mass.gov/dep/air/climate

U.S. Department of Energy: Solar America Initiative
www1.eere.energy.gov/solar/solar_america

U.S. Department of Energy: Energy Star
www.energystar.gov

U.S. Green Building Council: Leadership in Energy and Environmental Design
www.usgbc.org

Intergovernmental Panel on Climate Change
www.ipcc.ch

Kyoto Protocol
unfccc.int/kyoto_protocol/items/2830.php

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change the future

www.cityofboston.gov/climate